

**Attachment D**  
**RI Work Plan Outline**

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# RI Work Plan Outline

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## 1. Introduction [R 299.5528(1)]

### 1.1 Project Purpose and Scope

- Discuss Dow's Part 111 Hazardous Waste Facility Operating License
- Purpose to present those activities as required by the License
- Describe location of the area addressed by the plan
- Present figures showing regional and area locations

### 1.2 Work Plan Organization

- Discuss documents (e.g., PMP, QAPP, DMP/IMP, H&SP) referenced in this RI Work Plan focusing on any information that is modified in order to implement RI tasks
- Present RI Work Plan structure, listing document sections

## 2. RI Objectives [R 299.5528(1)]

- Present Remedial Investigation and Corrective Action Objectives
- Discuss how RI Work Plan meets these objectives

## 3. RI Approach and Decision Processes [R 299.5528(1)]

### 3.1 Introduction

- Present the overall decision processes used to develop RI and describe how they have been used
- Discuss involvement of human health and ecological risk assessors in these processes

### 3.2 Data Quality Objective (DQO) Process

- Develop the DQO process for creating project-specific sampling objectives to assure consistency in objective development

### 3.3 Sampling Approaches [R 299.5528(3)(v)]

- Identify sampling approaches for the different media to be investigated

### 3.4 Data Evaluation Process

- Develop decision process to evaluate data for:
  - Site characterization
  - Site-specific criteria evaluation
  - Human health risk assessment
  - Ecological risk assessment
- A description of any statistical methods used to evaluate laboratory data relative to cleanup criteria

## 4. Current Conditions Report [R 299.5528(3)]

### 4.1 Introduction

- Incorporate previous information by reference
- Focus CCR on specific information directly relevant to establishing RI work plan
- Establish boundaries of the site
- Integrate information into a preliminary Conceptual Site Model

### 4.2 Physical Setting

- Regional background
  - Graphically illustrate the general geographic location of the site
  - Present a brief review of regional land use and industrial development (note the presence of any historic industry or landfills)
  - Identify project setting based on current zoning and land use (industrial, commercial, residential, agricultural, recreational) using publicly available information (existing aerial photographs, zoning maps, and land ownership)
- General Site Background/Historic Sources
  - Present a site map to illustrate the boundaries that define the “site”
  - Provide a general history of facility operations (e.g., to establish general sources and timeframe for impacts)
  - Discuss relevant release history, if known
  - Present key findings from a review of historic aerial photograph and topographic maps
  - Provide a brief summary of past operational and waste management activities that may have been the source of offsite soil and sediment impacts
  - Identify existing information on all of the following with respect to the physical setting of the facility: (i) Geology; (ii) Hydrology; (iii) Hydrogeology; (iv) Depth to saturated zone; (v) Hydrologic gradients; (vi) Proximity to aquifers; (vii) Proximity to surface water; (viii) Proximity to floodplains; and (ix) Proximity to wetlands.
  - Identify Current and potential groundwater use.

- Site Characteristics
  - Incorporate details from other studies by reference
  - Document relevant geologic features, particularly those related to soil type/properties for establishing soil adhesion factors
  - Identify relationship to geologic formations referencing existing documentation
  - Present meteorology conditions
    - If warranted, discuss information on background environmental quality levels
- 4.3 Offsite Environmental Conditions
  - Introduce the previous studies that have been completed
  - Discuss media-specific conditions based on available sampling data and compare to appropriate criteria
  - Identify potential constituents of interest (PCOIs) and media of interest and illustrate current distribution
- 4.4 Transport Mechanisms and Exposure Pathways
  - Discuss migration of contaminants based on transport mechanisms and pathways
  - Present incomplete and potentially complete exposure pathways
- 4.5 Preliminary Conceptual Site Model (CSM)
  - Describe process or basis for development of model
  - Develop conceptual model to integrate physical setting, offsite environmental conditions, human health, ecological, and environmental considerations, exposure pathways
  - Present CSM

## 5. Site-Specific Cleanup Criteria [R 299.5532(8); R 299.5705]

- 5.1 Introduction
  - Present the proposed process for developing site-specific criteria
  - Present the proposed process to develop criteria for human health and ecological risk assessment
- 5.2 Exposure Pathways [R 299.5706 and 5706a]
  - Identify media to be sampled
  - Identify exposure pathways to be applied in developing criteria
- 5.3 Cleanup Criteria
  - Identify cleanup criteria to be developed

## 6. Sampling and Analysis Plans [R 299.5528(3)(p)]

Site-specific sampling and analysis plans will be submitted for RI investigation and ecological risk assessment activities. Site-specific plans will include the following subsections:

### 6.1 Investigation Objectives

- The site-specific sampling and analytical plans will describe how the following subsections of R 299.5528(3) will be addressed by the RI:
  - Definition of the nature and extent of contamination...
  - Risks to the public health, safety, and welfare and to the environment and natural resources, including the identification of any water wells
  - Relevant exposure pathways.
  - All of the following with respect to hazardous substances that are present: (i) Amount; (ii) Concentration; (iii) Hazardous properties; (iv) Environmental fate; (v) Bioaccumulative properties; (vi) Persistence; (vii) Mobility; and (viii) Physical state.
  - Source identification and evaluation.
  - The likelihood of future releases if the hazardous substances remain at the facility.
  - The extent to which natural or human-made barriers currently contain the hazardous substances and the adequacy of the barriers.
  - The impact of any planned demolition activities on conditions at the facility.
  - The extent to which hazardous substances have migrated or are expected to migrate from the area of release
  - An evaluation of injury to, destruction of, or loss of natural resources related to the release.
  - Contribution of the hazardous substances at the facility to contamination of the air, land, or water.

### 6.2 Data Quality Objectives

- Develop site-specific objectives that will provide sufficient information to determine site specific criteria, complete ecological risk assessment, and determine nature and extent of contamination in a matrix format that incorporates overall RI objectives and strategies
- Develop sample design

### 6.3 Field Investigation Activities

- Describe each of the field activities (including soil, sediment, human health/ecological risk evaluation, surveying) that achieve the site-specific DQOs (including media to be sampled, number of samples to be collected, analytical parameters; Reference QAPP and SOPs)
- Present as a SAP matrix
- Present site-specific sampling procedures used to implement the SAP scope of work, including but not limited to:
  - A description of monitoring well construction.
  - A description of, and rationale for, any geophysics techniques used in the investigation.
  - Sample collection and preparation procedures.
  - Identification of the laboratory or laboratories responsible for sample analysis.

- Laboratory methods used to generate all remedial investigation data . . . .
  - A description of any statistical methods used to evaluate laboratory data relative to cleanup criteria
- Reference QAPP and SOPs (including access agreement requirements, utility clearance procedure)

## 7. Deliverables [R 299.5528(4)]

- List table of deliverables – including preliminary draft, draft, and final versions of the following:
  - RI Report fulfilling the requirements of the Operating License and R 299.5528
  - Bi-monthly Reports

## 8. Schedule

- Schedule consistent with the SOW

## 9. References

- Include references and glossary of terms

## Appendixes

- Figures pertaining to the RI WP sections will be presented as an appendix
- Tables associated with the RI WP sections will also be presented in an appendix